

CR 140735

N75-12400

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During this reporting period progress in the following task areas was made.

Task I - Transmittances

a. Oxygen "A" Band

No calculations of transmission in the "A" band region of the spectrum were performed this quarter.

b. $2.0\mu\text{m}$ CO₂ Band

The Lowtran II program is still undergoing modification for use on the NOAA IBM computer.

Task II - Scattering Calculations

This task has been completed.

Task III - Cloud Models and Returned Signals

a. Cloud Models

This task has been completed.

b. Returned Signals

Pending completion of Task I b, we plan to combine the results of Tasks I, II, and III a with appropriate instrument spectral response data to simulate results.

Task IV - Deconvolution Procedure

Analytical models for the filter responses of the S191 have been developed. A working deconvolution program is now available.

Task V - Background Meteorological Data

Additional background, attitude, and calibration data from JSC were received during this reporting period.

Task VI - Analysis of Satellite Data

The bulk of our effort in the past quarter was devoted to processing the data tapes we have received. Programs to read the tapes have been written. Programs to convert counts to radiances and wavelength have been written. Preliminary analysis indicated a discrepancy in placing the center of oxygen "A" band of about 125 Å. A careful review of in-flight calibration measurements for SL-2 and SL-3 revealed that if a linear interpolation was performed between the measured points much

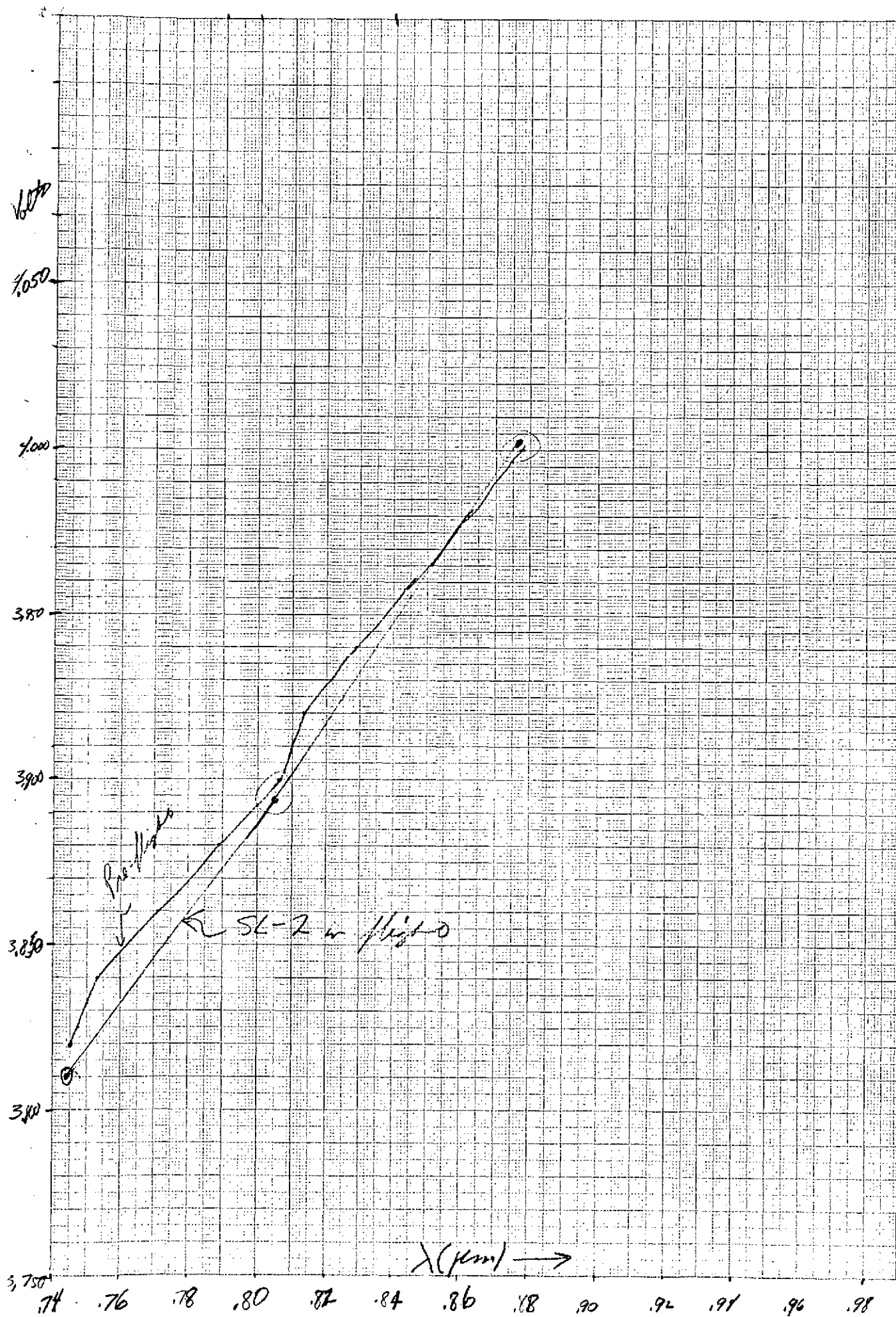
better agreement with the center of "A" band was obtained. The accompanying figure, Figure 1, shows the difference in interpolation between that suggested in manual MSC-07744 and the linear scheme. The curve labelled pre-flight is taken from manual MSC-07744. The curve labelled SL-2 inflight is taken from manual MSC-05528 (SL-3) and uses linear interpolation between measured points. Current efforts are being directed towards accounting for out-of-band transmission by the filter. The problem appears to be serious in the $2.0 \mu\text{m}$ region of the spectrum and less serious elsewhere.

Travel

The Principal Investigator, John Alishouse, attended the EREP PI Conference at JSC July 16-18.

Financial Statement

Effective August 30, 1974 all salary and overhead charges against this project were suspended. The remaining funds, about \$2,200, were reserved for computer costs and travel if required. Work by the Principal Investigator and programming support group on the project is continuing.



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